UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/475,526	12/30/1999	CHARLES R. YOUNT	042390.P6602	6450

7590 03/25/2004	EXAMINER
BLAKELY SOKOLOFF TAYLOR & ZAFMAN LLP 12400 WILSHIRE BOULEVARD SEVENTH FLOOR LOS ANGELES, CA 90025	KENDALL, CHUCK O

ART UNIT	PAPER NUMBER
2122	

DATE MAILED: 03/25/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

	Application No. 09/475,526	**Applicant(s)** YOUNT ET AL.
Office Action Summary	**Examiner** Chuck O Kendall	**Art Unit** 2122

-- *The MAILING DATE of this communication appears on the cover sheet with the correspondence address* --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE _3_ MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on _12 February 2004_.

2a)☐ This action is **FINAL.**   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) _21-45_ is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) _21-45_ is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All   b)☐ Some * c)☐ None of:

    1.☐ Certified copies of the priority documents have been received.

    2.☐ Certified copies of the priority documents have been received in Application No. _____.

    3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)
2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3)☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
    Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____.
5)☐ Notice of Informal Patent Application (PTO-152)
6)☐ Other: _____.

DETAILED ACTION

1. This action is in response to the application filed 02/12/04

Claims 21 - 45 have been examined.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. Claims 21, 22, 31, & 32 are rejected under 35 U.S.C. 103(a) as being

unpatentable over Hollander USPN 6,347,388 B1 (hereinafter "Hollander"), in view of

Bauman et al. USPN 6,226,716 (hereinafter "Bauman").

Regarding claims 21, & 31 Hollander discloses a method, and system (see FIG.

1, for system) comprising:

generating a first test program population to test the functionality of an integrated

circuit (IC), the first test program comprising a plurality of test programs having a first

set of instructions and data;

executing each of the test programs in the first test program population;

evaluating a first set of coverage, data from the first test program to determine if

the IC has been sufficiently tested (7:5 – 12), wherein evaluating the first set of

coverage data comprises comparing the coverage data to a predetermined coverage

requirement (5:32-37, see coverage data and cross coverage analysis); and

generating a second program population if the IC has not been sufficiently tested

by the first test program population (FIG. 2, 235 and column 9 lines 7 – 10), the second

test program comprising a plurality of updated test program is a mutation of the first test

program population for a combination of two or more of the test programs of the first test

program population. Hollander doesn't explicitly disclose updated test program is a

mutation of the first test program population for a combination of two or more of the test

programs of the first test program population. However, Bauman does disclose this in

an analogous prior art (Bauman, 11: 60 – 65, see as modified in the second test case,

602). Therefore, it would have been obvious to one of ordinary skills in the art at the

time the invention was made to combine Hollander and Bauman because, modifying

and updating test programs with previous ones, keeps testing more consistent and

targeted.

Regarding claims 22, the method of claim 21, further comprising:

executing the second test program population (Hollander, 5: 5 – 10, see optional

testing and co-verification).

Regarding claim 32, the system version, of claim 22, see rationale as previously

discussed above.

4. Claims 23, 24, 33 & 34 rejected under 35 U.S.C. 103(a) as being unpatentable

over Hollander USPN 6,347,388 B1 (hereinafter "Hollander"), in view of Bauman et al.

USPN 6,226,716 (hereinafter "Bauman") as applied in claims 22, and 32 in view of

Hayes USPN 5,799,266.

Regarding claims 23 & 33, Hollander as modified by Bauman, discloses all the

claimed limitation as applied in claims 22 and 32. The modification of Hollander and

Bauman doesn't explicitly disclose generating a first abstract syntax tree. However

Hayes does disclose this limitation. Therefore it would have been obvious to one of

ordinary skill in the art at the time the invention was made to   combine Hollander and

Bauman with Hayes to implement the instant claimed invention because, generating

tests using syntax trees allows programmer to test all possible combination thereby

achieving the desired results.

Regarding claim 24, Hollander as modified by Bauman discloses all the claimed limitation as applied in claim 23. The modification of Hollander and Bauman doesn't explicitly disclose generating a generating a second abstract syntax tree and translating the first AST into a first executable. However Hayes does disclose this limitation in an analogous prior art (Hayes, 8:45 – 50 as understood by the examiner a test driver utilizes a syntax tree, therefore since art discloses a plurality of drivers examiner interprets a second abstract syntax tree to be inherent also see Fig. 3, also see Fig. 6, 66, 68, 70 also see 8: 45 – 50). Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine Hollander and Bauman with Hayes to implement the instant claimed invention because, generating tests using syntax trees allows programmer to test all possible combination thereby achieving the desired results.

Regarding claim 34, the system version of claim 24, see rationale as previously discussed in claim 24.

5. Claims 25 – 30, & 36 – 40 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hollander USPN 6,347,388 B1 (hereinafter "Hollander"), in view of Bauman et al. USPN 6,226,716 (hereinafter "Bauman") as applied in claims 24, and 34 in view of Hayes USPN 5,799,266 and further in view of Miller et al USPN 6,175,948 B1 hereinafter Miller.

Regarding claims 25 & 35, the modification of Hollander, Bauman and Hayes discloses all the claim limitations as applied in claims 24 and 34. The modification of Hollander, Bauman and Hayes doesn't explicitly disclose mutating a selected AST. However, Miller does disclose this feature (Fig. 4, 40). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the modification of Hollander, Bauman and Hayes with Miller to implement the instant claimed invention because, making an AST reusable makes generating tests more efficient.

Regarding claim 26, the modification of Hollander, Bauman and Hayes discloses all the claim limitations as applied in claims 25 above. The modification of Hollander, Bauman and Hayes doesn't disclose wherein mutating AST comprises removing a segment of the selected AST and inserting a replacement into the selected. However, Miller does disclose this feature in an analogous art (14: 60 – 65). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the modification of Hollander, Bauman and Hayes with Miller because, modifying the AST's would make the system more reusable.

Regarding claim 27, see claim 24 for reasoning.

Regarding claim 28, method of claim 25 wherein mutating a AST comprises;

selecting the first and second AST into mutated AST (Miller, 3:30 – 35, see integration and merging).

Regarding claim 29, see claim 27 for reasoning.

Regarding claim 30, the method of claim 23 further comprising adding the first AST and the first set of coverage data into a test program after the first test program population has been executed, see (Hollander Figure 1, for coverage data).

Regarding claim 36, see claim 26 for reasoning.

Regarding claim 37, see claim 27 for reasoning.

Regarding claim 38, see claim 28 for reasoning.

Regarding claim 39, see claim 29 for reasoning.

Regarding claim 40, see claim 30 for reasoning.

Response to Arguments

6. Regarding Applicant's arguments filed 02/12/04 with respect to claims 21 – 40 have been considered but are moot in view of the new ground(s) of rejection.

Reasons for Allowance

7. The following is an examiner's statement of reasons for allowance: Claims 41 - 45 are in condition for allowance, because prior art does not teach or render obvious:

"... a feed back engine to build and update a population test program by generating an abstract tree (AST) for each test program.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Correspondence Information

8. Any inquires concerning this communication or earlier communications from the examiner should be directed to Chuck O. Kendall who may be reached via telephone at (703) 308-6608. The examiner can normally be reached Monday through Friday between 8:00 A.M. and 5:00 P.M. est.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tuan Dam *can be* reached at *(703) 305-4552.*

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is *(703) 305-3900.*

For facsimile (fax) send to 703-7467239 official and 703-7467240 draft

Chuck O. Kendall

Software Engineer Patent Examiner

WEI Y. ZHEN
PRIMARY PATENT EXAMINER